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CRUISING AND COLLECTING OFF THE COAST OF LOWER CALIFORNIA.

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Cruising on our southern Pacific coast is less indulged in than along the Atlantic seaboard, because there is a marked dearth of the land-locked harbors into which our eastern yachtsmen can run almost every night, or in case of a threatened storm. Nevertheless, two years ago, tempted by our summer promise of continued good weather, a party of seven, including my wife and two children, started from San Diego harbor for a run down the coast of Lower California in the staunch little schooner "Lura."

A late start made it advisable to anchor over night at the mouth of the harbor, but this gave a chance to get under way at daylight for a beautiful run of seventy miles to "Todos Santos" bay, on the sloping shores of which lies "Ensenada," the capital of the northern department of the Mexican territory of "Baja California."

As we ran we left broad to the starboard the Coronados, a group of seven small islands belonging to Mexico, but lying only twenty miles off San Diego, and a common terminus of our short cruises. They, like most of the off-shore islands, are bold volcanic masses, the largest, though less than three miles long, rising 880 feet above the sea, in many places sheer for hundreds of feet. This is a type of all the coast line for several hundred miles south. Bluffs and headlands, with here and there a narrow or broad valley sweeping down to the sea, but above all and crowning all, the foot-hills and the great mountains of the Coast Range.

It was just turning dusk as we rounded Ensenada Point into Todos Santos Bay, which is little better than an open roadstead, except for the protection offered by the chain of Todos Santos islands a dozen miles to sea, and the shelter of the Point from north-west winds. Immediately on dropping anchor we were boarded by the Comandante of the port, Don Luis Fernandez, and the quarantine officer, our old friend, Dr. Peterson, who courteously waived all examination, allowing us to go ashore at will. The two nights spent here with a nearly full moon shining down on us, just enough ground swell to keep in mind that we were cruising, and the balmy breeze of semi-tropical summer blowing over us, make a memory picture as near perfection as this world gives.

The day was busy. First we had the usual difficulties with the Mexican officials. In the absence of specific instructions, they were unable to determine whether we should register our craft as a private yacht or a passenger vessel. In either case they notified us that we must bear the expense and delay of telegraphing to the City of Mexico for instructions and license. Fortunately our schooner had on a former occasion been used in fishing down the coast, and after much argument Señor Victorio decided to grant us a three months' fishing license, at the same time clearing us with a clean bill of health for the return trip to San Diego. Under this very satisfactory arrangement we could run down the coast as far as the jurisdiction of the northern department reaches—something like 300 miles—land where we chose, collect what we liked, and when we were ready, sail away home without touching again at "Ensenada."

While our sailing master was arranging all this, the rest of us passed the day in seeing the few sights of the town, observing Mexican life, and visiting a few old friends. Among these Mrs. Gastelum holds first place, not for her society alone, though she is a woman of wide experience and much knowledge, but because in a former phase of her existence she was married to a Mexican customs official, who, during his sojourn at various ports on the Pacific Coast, had collected many bushels of shells which she has stored away in many boxes and barrels. This was the second time I had overhauled the lot, and as before I was astonished at the low price placed on my pickings, after a long conference between herself and her husband—a later acquisition. As I paid the bill I reflected that while I should undoubtedly have enjoyed the society of the former husband with

his evident love of shells, the later acquisition was probably more in harmony with the size of my pocket-book.

Away at daybreak Sunday morning, looking our last on "Ensenada," one of the goodliest sights to look upon it has been my fortune to see in a fair amount of knocking about. A great sweep of unbroken sand beach from "Ensenada Point" to "Punta Banda," a distance of eighteen miles, the high range of Punta Banda breaking off abruptly into the sea to the south, the horseshoe being completed by the low mesa-crowned Todos Santos islands. The town of Ensenada nestles on the low beach under the high ridge which forms Ensenada Point to the northwest, the broad valley reaching back with few breaks for twenty miles—then the foothills, and back of all, as always, the great mountains! It is our dry season and everything is parched and brown, and the near-by ridges show great outcroppings of black volcanic rock, but the blending of color under our brilliant California sun, and the foreshortening of great distances giving the effect of haze and softness, make a scene of marvelous beauty.

A glorious sail—free with the prevalent northwest wind—out through the narrow gate between Punta Banda and the easterly island of the Todos Santos group, which was alive with seal and waterfowl, and down a bold coast for twelve miles to cast anchor under the lee of the "Santo Tomas" headland noted all along the coast for its frequent storms. Here we divided up, one to sleep, two to fish, two to hunt deer, and two to collect shells and algae. All were successful but the deer-hunters. Unfortunately I did not keep my Santo Tomas collections apart from others, so I can give no fair idea of my catch, but a single *Haliotis rufescens*, Swainson, represents the only species not appearing in the list which closes this article.

Away again at sunrise for our final southward stretch. All day we ran almost before the wind, the coast growing generally more bold and culminating in Cape "Colnet," a great promontory presenting an almost unbroken face to the northwest, a cliff many miles long and many hundred feet high. We round the Cape with a half gale, and bear away southeasterly to our final destination, the little island of San Martin, lying five miles off the coast and ten miles from San Quintin, the first land-locked harbor in 200 miles from San Diego. We cast anchor at 3 a. m., and all hands slept late.

Of San Martin a few words' description must suffice. Roughly it is a round conical island, three miles in diameter, with two peaks, the higher a typical extinct volcano rising 471 ft., with an almost perfectly regular crater about 250 ft. in diameter, and between 75 and 100 ft. deep. The island is a solid mass of very hard volcanic rock with frequent small caves—evidently blow-holes—covered imperfectly where reasonably level by a thin soil which supports a moderately abundant vegetation in which various species of cactus are very plentiful. Up the slopes are great slides of loose rock, and owing to the cacti and the roughness of the way, the climb of a little over a mile to the top proved a very serious undertaking.

On the north side of the island a moderately level space, covering between 500 and 1,000 acres, is occupied by rookeries, mostly of pelicans and cormorants. The birds were most of them just beginning to fly, and a rough estimate convinced us that there were certainly some millions of them. We spent the greater part of one day watching them. The young cormorants waddled to the bluffs, spread their wings evidently for their first trial, and sailed or flew awkwardly into the ocean. There they were perfectly at home and could not be distinguished from the old birds, swimming and diving with perfect ease. But the pelicans had a harder time. They could fly very well indeed, but like the Irishman "had a divil of a toime loighting." Starting from some slight elevation they would sail away majestically, managing their great wings and bodies remarkably well. After a turn of one or two hundred yards they would light without slowing up perceptibly, come down with a thud that we could hear a hundred yards away; turn two or three somersaults, and straighten up with the same appearance of surprise and offended dignity which we have all seen drunken men assume when suffering from similar mishaps. We actually laughed till we cried, and it was hours past our dinner time before we could agree unanimously to start for the boat.

Running easterly at a tangent from the southerly edge of the island for nearly 1,000 yards is the so-called breakwater, a nearly straight line of enormous beach-worn boulders arranged like some huge artificial jetty. The acute angle has filled in with sand over a space of about fifty acres. In the bight there is safe anchorage except in a northeast storm. At two places dips in the breakwater bring it below high tide level, one opposite the little harbor, and the

other opposite the sand bar, and here the constant tidal current has excavated a little circular bay, covering two or three acres. This bay and the breakwater, with another little bight not much over thirty feet across, furnished nearly the only good collecting ground on the island. Otherwhere I found only a few of those hardy shells capable of standing any amount of buffeting by the waves, Chitons and Limpets, an occasional Chlorostoma, and the *Monoceros lugubre* Sby., which is in evidence along the whole coast from Ensenada south.

Dredging at moderate depths gave little results, but some of my fishermen friends who spend much time about this island, which furnishes some of the great fishing of the coast, make a practice of bringing up to me rocks which they haul up on their lines from considerable depths, attached to kelp roots. I am, therefore, able to list a considerable number of deep-water species. It has seemed to me advisable to publish the following list of shells secured from this small island and its immediate vicinity as a contribution to our knowledge of geographical distribution. I have to thank Dr. Wm. H. Dall of the National Museum, and Mr. Henry Hemphill of San Diego, Cal., for determining a very large share of the species about which I was in doubt.

After commenting on the fact that many of the specimens which I sent to him were too young or too worn to be identified specifically, Dr. Dall writes, "There was a small *Rissoina* among the shells which we have had for some years from San Pedro, but had not named, and with your permission we propose to call it *R. Bakeri*, Dall and Bartsch. There are also some of the new *Pyramidellidæ* described in the paper on *W. Am. Pyramidellidæ* which Mr. Bartsch and I have in preparation."

Our return trip was made much more slowly than the outward one, as the prevalent wind made it a long tack to windward. The only break was a night run against a sharp storm to make the doubtful shelter of Santo Tomas, where we lay for twenty-four hours with two anchors out, estimating the chances of a shift of the wind driving us to sea again. Our cruise lasted seventeen days, and was unanimously voted a success.